

**MS-AF**

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Michael TITTMANN

Serial No.: 10/517,883

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For: Fuel supply system

Examiner: Chaudry, Atif H.  
Group Art: 3753

Conf. No.: 1374

**Mail Stop AF**

Commissioner for Patents

P.O. Box 1450

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**REQUEST FOR PRE-APPEAL BRIEF REVIEW**

Applicants request review of the Final Rejection in the above-referenced application. This request is being filed with a Notice of Appeal. No amendments are being filed with this request.

The review is requested for the reason(s) set forth on the following pages.

## REMARKS

Claims 1-3, 5-7 and 9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,276,342 ("*Sinz*") in view of U.S. Patent No. 6,553,973 ("*Coha*").

This Request for Pre-Appeal Brief Review is presented because there is a clear legal deficiency in the rejection of at least claims 1 and 2 for the following reasons. The Examiner's proffered analysis of the combination of *Sinz* and *Coha* fails to provide a *prima facie* case of obviousness because:

(i) *Sinz* and *Coha* can not be considered to teach or suggest "wherein the suction sides of said suction jet pumps are each arranged above a designated minimum height in said surge chambers such that if said suction jet pumps detect that the filling level of one surge chamber has dropped below the minimum height, the feeding of fuel from the one surge chamber ceases", as recited in independent claim 1, because the only pump disclosed by the combination of *Sinz* and *Coha* that pumps from one surge chamber to another is arranged directly on the bottom of the right hand surge chamber in Fig. 1 of *Coha*; and

(ii) *Sinz* and *Coha* can not be considered to teach or suggest "each said at least one suction jet pump feeds fuel from the one of the surge chambers in which said at least one suction jet pump is arranged into another one of said surge chambers", as recited in claim 2, because the combination discloses only one pump that pumps from one surge chamber to another.

The combination of *Sinz* and *Coha* fails to achieve a system that provides level balancing to a designated minimum height in the manner obtained by the expressly-recited subject matter of independent claim 1.

In the Final Office Action of December 8, 2009, the Examiner withdrew the *Denneulin* reference, which was previously cited in the June 9, 2009 Office Action based on the failure of

*Sinz* to disclose “the jet pumps ceasing operation in response to drop in level of the fuel in the surge chamber”, and merely stated that “all jet pumps stop pumping fluid when the filling level drops below the suction inlet of the jet pump”. This assertion glosses over the salient aspects of applicants’ claimed invention. The combination of *Sinz* and *Coha* fails to teach or suggest “wherein the suction sides of said suction jet pumps are each arranged above a designated minimum height in said surge chambers such that if said suction jet pumps detect that the filling level of one surge chamber has dropped below the minimum height, the feeding of fuel from the one surge chamber ceases”, i.e., a system that provides level balancing in the manner provided by the expressly-recited subject matter of independent claim 1.

While it is true that all jet pumps eventually stop pumping fuel when a filling level drops below the suction inlet of the jet pump, there is no level balancing of the surge chambers that is performed by the system of *Sinz* and *Coha* in the manner achieved by the fuel supply system of independent claim 1. The salient point to grasp here is not that all the jet pumps of independent claim 1 stop pumping fuel when a filling level drops below the suction inlet of the jet pump but, rather, when the suction pumps of independent claim 1 detect that the filling level of one surge chamber has dropped below the designated minimum height, the feeding of fuel from this particular surge chamber having the insufficient fuel level ceases.

*Sinz* shows an arrangement having two suction jet pumps (23, 24) (see FIG. 1), which are arranged outside of the surge chambers. Since the jet pumps of *Sinz* are arranged outside of the surge chambers, *Sinz* fails to teach or suggest “wherein the suction sides of said suction jet pumps are each arranged above a designated minimum height in said surge chambers such that if said suction jet pumps detect that the filling level of one surge chamber has dropped below the

minimum height, the feeding of fuel from the one surge chamber ceases”, as recited in independent claim 1.

*Coha* likewise fails to teach or suggest an arrangement that operates to achieve level balancing between a pair of surge chambers in the manner achieved by the claimed fuel supply system of independent claim 1. As stated above, there is only one pump disclosed by *Coha* that pumps from one surge chamber to another. That pump is associated with the pump designated 68. In particular, *Coha* (col. 3, lines 37-42) explains that “[t]he fuel tank 12 includes a first fuel line 72 connecting the by-pass fuel jet pump 68 to the fuel filter 32 of the fuel tank cover and fuel filter assembly 10 and may include a second fuel filter line 74 connecting the by-pass fuel jet pump 68 to the high-pressure fuel jet pump 70”. *Coha* (col. 3, lines 47-53) further explains that “[i]n operation, fuel inside the fuel tank 12 is pumped by the by-pass fuel jet pump 68 directly to the pressure regulator 62 of the fuel tank cover and fuel filter assembly 10 and aspirated fuel is pumped by the by-pass fuel jet pump 68 to the high-pressure fuel jet pump 70. Fuel is also pumped by the high-pressure fuel jet pump 70 to the pressure regulator 62 of the fuel tank cover and fuel filter assembly 10”. *Coha* thus teaches that fuel is pumped from the bypass fuel jet pump 68 directly to the pressure regulator 62 of the fuel tank cover, and that fuel is pumped by the bypass fuel jet pump 68 to the high pressure fuel jet pump 70. But *Coha* shows that the pump 68 is arranged directly on the bottom of the surge chamber, and fails to teach or suggest a designated minimum height in the surge chamber.

Accordingly, the combination of *Sinz* and *Coha* fails to teach or suggest “wherein a suction side of said at least one suction jet pump for filling a first surge chamber of said plural surge chambers is arranged in a second surge chamber of said plural surge chambers, wherein the suction sides of said suction jet pumps are each arranged above a designated minimum height in

said surge chambers such that if said suction jet pumps detect that the filling level of one surge chamber has dropped below the minimum height, the feeding of fuel from the one surge chamber ceases”, as expressly recited in independent claim 1.

Moreover, the teachings of *Coha* are misleading in that the pumps depicted in *Coha* are described as types of “jet” pumps. In actuality, however, the skilled person would readily know that a jet pump has a nozzle and a venturi tube. A jet pump operates with a working fluid (e.g., fuel) that enters the venturi tube through a nozzle and creates a negative pressure that is responsible for siphoning or drawing fuel delivered through the venturi tube to a delivery line.

There are no additional pumps in *Coha* with which to create a jet of working fluid. In fact, the so-called “jet” pumps of *Coha* are merely conventional, electrically driven fuel pumps. Further, it is old and well known that the efficiency of a jet pump is very low. The purported jet pump 68 of *Coha* delivers fuel through line 72 to a filter 32, which creates a high flow resistance. A true jet pump is actually unable to deliver fuel through a filter in the manner disclosed in *Coha*. Accordingly, *Coha* fails to teach or suggest an arrangement of applicants’ claimed jet pumps in a surge chamber. The skilled person is provided with no reason whatsoever based on the teachings of *Coha* to thus modify the arrangement of the teachings of *Sinz* without engaging in an impermissible hindsight construction based on applicants’ instant disclosure. Applicants accordingly assert that independent claim 1 is therefore patentable over the combination of *Sinz* and *Coha* for *at least* this additional reason.

Regarding claim 2, there is no level balancing of the two surge chambers in the proffered combination in which each jet pump is arranged to pump fuel from one surge chamber to another surge chamber. It is clear, as described above, that the fuel jet pump 70 of *Coha* does not

provide fuel to the fuel reservoir 69. Instead, the fuel jet pump 70 of the *Coha* system pumps fuel only to the fuel filter 32 through the third fuel line 76.

The claimed fuel supply system of claim 2 requires interoperability of plural surge chambers and suction jet pumps to advantageously provide load balancing. The skilled person is provided with no reason whatsoever based on the teachings of *Coha* to modify the arrangement of the teachings of *Sinz* without engaging in an impermissible hindsight construction based on applicants' instant disclosure.

For at least the above reasons, withdrawal of the rejections under 35 U.S.C. §103(a) are in order, and a notice to that effect is requested.

Applicants respectfully submit that this application is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,  
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